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The Utility of What Makes Life Interesting.

FOOD, clothing and shelter are the primal, universal wants; but when these are supplied, new needs arise, the wish for increasing comfort and security, and then the desire to make life interesting, so that it may be something more than mere existence. The means to this end are as varied as the special qualities and dispositions of individual men, but, however it may reveal itself, this hunger for something beyond the means of physical subsistence is an ideal element in our nature. It is the origin of poetry and romance, and of all art. It is the source of progress and civilization, and is, indeed, the distinguishing endowment and crown of humanity. It is not enough for men to have food, clothing and shelter in amplest supply. The physical life itself is not prosperous or secure when the mind is starved and dwarfed. Pleasant thought is a vital force. Interesting mental employment promotes health and longevity, and is a necessity for all.

The means, conditions and occupations which make life interesting for some persons have no such value or result for others. The sustaining pleasures of one man would be a burden and weariness to another. Growth carries the same individual beyond the earlier ideal satisfactions, and he discerns more truly what is normal, sane and healthful. A cultivated and developed taste rejects what was once highly esteemed. In an advanced state of society every person would be free to employ his means and opportunities for the satisfaction of his own ideal needs—to pursue the objects which would make life most interesting to him, if he did not trespass upon the rights of others. At the same time every individual would be influenced and aided by the general taste, judgment and culture of the community about him.

The growing interest in out-of-door life, and in means of recreation that can be enjoyed in the open air, is one of the most encouraging tendencies of the time. Gardening and the care of flowers and trees are becoming more and more attractive to thoughtful and cultivated people everywhere. These are sane and wholesome occupations, and they are coming to be depended upon for relief from weariness and "nervous prostration," as it is found that pleasant activity in the open air is often a more potent restorative than medicine. The primary benefit comes, of course, from our breathing purer air, and more of it, when out-of-doors; but every one needs a more inspiring reason for going out than the bare and depressing thought of the need of improvement to health. It is much better to think about our flowers or shrubbery, or to be interested in plans for the care of a garden or door-yard, than to think of ourselves in any more direct way. In all such activities immediate utility is associated with the more ideal aims.

The best garden or farm is partly a work of art. Its order and beauty add to the interest of life for its possessor, especially if he cultivates it with his own hands and brain. A day laborer with a garden, or a few square yards of ground about his door, has an artist's opportunities in the application of his taste to the capabilities of the area which he plants and shapes. He may have the delight of creating something beautiful and interesting which did not exist before. It is a serene happiness to think out plans for doing the best that can be done with even the smallest piece of ground on which anything can be made to grow. He who has room for trees has it in his power to make enduring changes in the landscape, and the care of even a few trees will supply much of interest from the time they are planted till their protector can walk or rest at will under their shade. One becomes attached to them as to children and friends, and they respond in their way. The watch against their many foes often involves unpoetical activities; but struggle is the condition of all animate being, and life without it, if it were possible, would not be interesting.

The defense of trees against their insect enemies introduces us to one of the most interesting provinces of the out-of-door world, the life of birds and their services to man. In the order of animal existence on our planet they are the natural instrument for keeping insect life down to its normal level and proportion. But we have repressed the bird population in this country to such an extent that we have produced an enormous over-development of insect life, so that the dominion is given over to them, and they have become an all-pervading curse, like that of the frogs in Egypt when they covered the land, entered the houses and climbed into the very bread-bowls. Learned men write books and governments make large appropriations to help farmers, orchard-growers and vine-growers to defend their crops against injurious insects, but if we were civilized enough to protect our friends and allies instead of cherishing our enemies, the birds would soon dispose of most of these pests.

It is often observed that birds are more particular about their food than formerly, and that many of the worst insects are not eaten by them. But that is because their supply of food is so abundant that they can afford to be dainty and to eat only what they like best. It is much the same as if a banquet for a thousand men were served every day for half a dozen. They could taste here and there, and would make little impression on the whole supply. It is so with the birds because they are so few, but if they were protected till the bird population began to press upon their means of subsistence, they would not be so fastidious, and would be glad to get any kind of bug or worm, and would snap up every one that showed his head.

Besides their utility as insect destroyers, birds are among the most interesting and companionable of all living creatures. Few people in this country have any intimate acquaintance with birds and their ways, but those who have studied them in close and pleasant relations know that they have a great deal of individual character and a wonderful and most interesting kind of intelligence. Their music, too, often peculiarly sweet and fascinating, with a mysterious and indefinable quality—a kind of divine suggestiveness—appeals strongly to the higher and gentler elements of our nature. But few persons now hear this music, because the birds that remain are so hunted, terrified and tormented that they rarely feel like singing. If the children and young people of the country were instructed in their homes,

schools and churches regarding man's relation to the earth on which he lives, and his responsibility for the care and ordering of it and its products, not only would there be a saving every year of millions of dollars in the crops of our farms, gardens, orchards and vineyards, which are now destroyed by insects, but life would soon be much more interesting to the wiser race of men and women.

An Associated Press dispatch, dated at Silver City, New Mexico, October 27th, serves to emphasize what was said in these columns last week with regard to the difficulties which will attend any effort to secure from Government consideration even of a comprehensive scheme for preserving the forests on the public domain of the United States. It appears from this dispatch that an attempt made by the agents of the Treasury Department to protect the forests in southern New Mexico from promiscuous thieving has met with violent opposition and protest. The effort of the Government to preserve its valuable timber from being stolen bodily is characterized as "a summary step to paralyze the chief industries of the territory." The owners of saw-mills, who have been carrying on their business for years with timber openly stolen from the Government, receive the sympathy of the community because they have been "made miserable by Government agents," who have attempted to perform the duties of their office. Congress is to be asked to modify the laws so that plunder can be made legal, that the mine-owners and timber-men of New Mexico and of the other territories can carry on their operations without fear of molestation.

The forests of southern New Mexico, covering a mass of high and almost inaccessible mountains, are the most valuable in all the region immediately adjacent to the southern boundary of the United States. The timber which they contain is often large and of good quality, considering that it has grown in a comparatively dry region. These forests, could they be managed with a little care and forethought, are capable of supplying, indefinitely, the people and the mines of New Mexico with timber, and of furnishing a large amount for shipment to the treeless regions east, north and west. The time, indeed, is not far distant when the great body of timber occupying the mountain ranges of southern New Mexico and south-eastern Arizona will, if it can be preserved from needless destruction, become a considerable factor in the timber-supply of North America. These forests, too, assure the integrity of a number of small streams absolutely essential to the existence of the inhabitants of the valleys at the base of the mountains. Were these forests under proper control, and systematically worked, the people of New Mexico would be able to purchase regular and abundant supplies of timber and firewood, and there would be no question of "one-third of the population being driven out of the territory, and of all business being paralyzed" by Government action. The truth of the matter is, however, that the people of New Mexico want their timber for nothing, and that a not inconsiderable part of the population are now in the territory because good timber can be had there for the taking. Settlements have been made and industries have sprung up on this basis, and every effort of the Government to protect its property will be met with determined and well organized opposition.

In this active local opposition lies the great obstacle to forest-conservancy in the United States. The task of preserving the forests of western America is in itself sufficiently difficult to tax the energy and the administrative ability of any nation. No forest region, not even that of India, which has been brought under control, presents anything like the physical and climatic difficulties which a forest-administration would be called on to encounter in dealing with the forests in the central and western parts of this continent. When to these natural difficulties are added national indifference and active local opposition, the prospect of serious reform is not encouraging. And yet if this destruction cannot be stayed, that portion of this continent beyond the 100th meridian must, with the exception of a few favored localities, be uninhabited before another century has passed; and the people of the United States, whatever their numbers may be, will then be crowded into the eastern side of the continent. The forests mean existence to the people living in more than one-half of the present territory of the United States, and in their future lies one of the great social and economic problems of the twentieth century.

Landscape-Gardening in Persia.

PERSIA has long been famed for the artistic genius of her people. It is less generally known, however, that the art of landscape-gardening has been for thousands of years one of the most characteristic of the æsthetic expressions of Ivan. This ignorance is doubtless caused by the fact that examples of the other arts of Persia can be exported or reproduced in color, whereas a garden cannot very well be exported, and few travelers have visited Persia or had the artistic training that would lead them to write intelligently about her arts.

I speak of the landscape-gardening of that country as reaching the rank of an art, because, in the first place, it is an original expression of a national taste for the beautiful, and in the second place, because, like all true art, it is an outgrowth from natural conditions and adapts itself to those conditions.

The climate of Persia makes out-of-door life essential. For nine months no rain falls, and even the wet season, which lasts less than three months, is attended with only moderate rain or snow on the elevated plateaus, which constitute the larger part of the country. The remainder of the year the skies are cloudless, the dews are imperceptible, and the dry air quivers with mirage. The heat is steady, but the nights are cool, owing to the elevation of the country. Exception may be made to these observations in regard to the climate of the narrow strip between the Caspian and the Elbarz Range, forming the northern watershed of those mountains. The vapors of the Caspian striking these slopes deposit a vast amount of moisture, which descends in numerous streams. The northern slope is covered with dense, jungle-like forests, the alluvial lands at the base are devoted to rice fields, and the steaming atmosphere reeks with malaria.

But, on passing the ridge, one enters a dry atmosphere and beholds before him plains extending six hundred miles, often mere waterless, verdureless sand, and always destitute of trees, except where irrigation has been employed. This is the region where the landscape-gardening of Persia has been developed and brought to exquisite perfection.

It is evident that an arid soil and a cloudless sky at once suggest the need of water and shade, and that those must be the prominent objects to be brought together in agreeable combinations, while the scarcity of the population and the engineering difficulties to be encountered must regulate to a large degree the characteristic features of a place. Add to these a third element—the last one would imagine as giving a direction to landscape-gardening—polygamy. This institution shapes almost every phase of Persian life. In the present case the seclusion of the women imperatively controls the arrangement of the grounds as well as of the dwelling apartments, and hence is one of the causes for the constant surprises and variety we find in the country-seats of Persian gentlemen.

In spite of these limitations, artists in landscape do not slavishly follow a fashion or some dominant conventional system of decoration, but allow the *genius loci* to stand at their elbow and direct them how to evoke beauty in accordance with the particular spot that, from an arid rocky slope or a barren plain, is to be transformed into a dream of voluptuous delight.

Having purchased his land, the proprietor does not say to the designer: "What is the latest style in landscape-gardening or in the construction of villas?" But, "What can you make out of this piece of land?" The land is not to be twisted into conventional designs, but the design is to be brought into harmony with the land. The variety possible on this principle in Persia is evident when we consider that the first object of a country-seat is, wherever possible, to locate it on some elevated point, in order to lower the temperature, and approach the sources fed by the mountain snows, the latter in order to have abundant water for irrigation, without which it is useless to attempt culture in that country, either of woodland or tilth.

I cannot better illustrate these statements than by a brief description of a characteristic place in the neighborhood of Teheran. These country-seats, by the way, all have specific names, by which they are known, rather than by the name of the proprietor. Jeferabad includes some sixty acres on the

steep slope of one of the spurs of the Shimran Range. The vegetation is divided between fruit trees, shade trees and flowers, arranged to make an agreeable summer residence and a profitable farm, the latter feature being so distributed as not to be too prominent in a pleasure seat.

The grounds are so steep and broken that a proper site for the residence could be obtained only by terracing. This added to the expense but also to the impressive beauty and majesty of the design, which has everywhere been carried out with an admirable combination of breadth and detail, and a general harmony of effect, which produces an impression on the memory more vivid and lasting than that of many far more elaborate and costly places I have seen in Europe. Herein is exhibited the consummate art of the Persian designer.

The shape of the estate is exceedingly irregular, roughly representing a pear pinched at the smaller end, which is, at the same time, the nearest the base of the hill. It is near this end that the gardens and residence are placed. These might have been more easily reached by having the main entrance to the grounds just at a bend in the road before it descends to follow the roaring brook that comes from the mountains and dashes through a romantic ravine. But to have done this would have been to sacrifice one of the finest effects of the place. This feature of Jeferabad is one of the most effective I have seen produced by the art of landscape-gardening.

Descending into a little hollow, the steep winding road inclosed on either hand with high walls, one comes unexpectedly to a lofty gateway on a widening of the street, the latter intended to afford space for the groups of horses attending the cavalcade of a Persian gentleman. Entering the gate, we look up an avenue of lofty, trimmed Sycamores and Poplars, forming on either hand a stately wall of green, through which glimpses of fruit-trees are seen. This avenue turns a sudden angle and continues up a gentle slope for a hundred yards, leading, apparently, to nothing; so dense is the vegetation, one can form no idea of the character of the place.

Still wondering what he is coming to, the visitor reaches another sharp angle in the avenue, and, without warning, faces a flight of broad stone steps, flanked by a carved balustrade at the end of the third stage of this impressive walk. At the head of the steps is a vast terrace, and, framed as it were between the walls of greenery beyond this terrace, appears a most graceful pillared pavilion surmounting a second terrace, the effect being not less beautiful than some of the restored temples of classic times, lifted toward the blue ether by gradual elevations.

It is not until one actually places foot on the pavement of the first terrace that he has any conception of the delightful surprise that awaits him. He beholds a platform one hundred and twenty yards in length and forty in width, from whence he gazes over the capital of Persia in the distance, an oasis of green on the plains, quivering with mirage fading away to the south. This view is seen through a break, permitted for this purpose, in the wall of foliage that surrounds the terrace.

The terrace is entirely paved, but yet we say this with reserve, as through the centre is a channel for a stream, and parterres abounding with flowers fill a large portion. The northern end is raised a foot and contains a circular tank some fifty feet in diameter. The east side of the terrace is protected by the wall of the second terrace rising fifteen feet. This terrace is of less width, and is, in turn, protected on the east side by a dense grove of Poplars swaying over it, like plumes in the regular trade wind.

The buildings are constructed on these two terraces in a manner to combine effect with the peculiar domestic arrangements of the country, and, at the same time, in a way that could not be admitted in a less mild and even climate. Extending entirely across the northern end of the first terrace are the apartments of the ladies, and these have a separate court, invisible until one enters it. This is paved, and beautified with roses grown in the form and almost the size of Lemon-trees. In the centre of this court is a tank, where the water plays at will; and from this court one reaches a stately apartment, serving as a common room where all can meet and sleep, gossip, embroider or touch the guitar as they choose, listening to the plashing of water from every quarter. For the water, led from the hill above, where it has fed the orchards, passes into the tank of the small court; thence it passes under the women's apartments to toss its spray again in a tank on the southern front of those apartments; thence it bursts forth again with a lofty jet in the large basin, then dashes along the terrace to break down a mimic cascade, and then passes under the dining-apartment at the southern extremity of this terrace, dashing forth down to the brook with the chatter of a mill stream.

In the meantime another branch of this stream is diverted to the second terrace, where it feeds two other basins between the three pavilions, for the master's quarters, which, at regular intervals, crown the centre and each end of that terrace. Thus at will five jets can play at once in this part of the grounds, in addition to two mimic cascades, and the roar of a brook which courses through the orchards. In warm weather the charm of this cooling music can be easily appreciated.

The large grounds which rise in the rear of these artificial works are densely covered with fruit and forest trees, judiciously broken by delightful winding walks, and intervals provided with seats. Here and there a terrace of rough masonry is bolstered against the hill-side, and a deep, rude tank, overgrown with moss and turfed, offers, at the highest part, a delicious spot for a fête champêtre, for which purpose it is often employed. Altogether, this portion of the estate forms a romantic wild wood, slightly aided by art and taste.

S. G. W. Benjamin.

Viburnum lantanoides.

IT is a singular fact that with the exception of the poor figure in Audubon's "Birds" no portrait has been published before of this shrub, which is by far the handsomest of the North American Viburnums, and one of the most beautiful plants of our flora. The fact that it is impatient of cultivation—for the Hobblebush, or Moosewood, as this Viburnum is often called at the north, is the most difficult of all our native shrubs to cultivate—probably accounts for this lack of figures, as American plants have been figured generally in European publications from specimens obtained in European gardens. *Viburnum lantanoides* was not included in either edition of the "Hortus Kewensis," and it is doubtful if it has flowered in a garden very often (a small plant flowered in the Arnold Arboretum this year) or that many persons who are not familiar with our woods in early spring have ever seen it in all its beauty.

It is a tall, stout shrub, with naked winter buds, reaching occasionally to a height of twelve or fifteen feet, with short tortuous stems, rather bare of branchlets, and covered with smooth, dark brown bark, that of the square or angled shoots being red and marked during the second year by numerous white dots. The leaves are confined to the ends of the branches; they are round-ovate, abruptly acuminate, sharply and doubly serrate, pinnately straight veined, the prominent veins connected by conspicuous transverse veinlets; six inches long when fully grown, by nearly as much broad. They are densely scurfy-pubescent when they first appear, as are the broad, stout petioles, the inflorescence, buds and shoots of the year. The flowers are produced in radial cymes, the marginal being neutral, with enlarged, flat Hydrangea-like corollas, an inch or more across. The inflorescence begins to unfold late in April or early in May, the neutral flowers opening first. The leaves are then an inch or an inch and a half long, and conspicuous from the broad prominent veins covered with dense brown tomentum. The flowers are fully open a month later, and the fruit ripens in September. It is coral red as it reaches maturity, turning dark crimson or purple when fully ripe, ovoid, rather flattened, and half an inch long. The stone is flattened, three-grooved on one face, deeply and broadly grooved on the other.

Viburnum lantanoides is found in the forests of New Brunswick and Canada, extending southward through the Appalachian Mountains as far as the high peaks of North Carolina and Tennessee, where it attains on the high western slopes of the Big Smoky Mountains its greatest development, and where specimens fully fifteen feet high of almost arborescent habit are not uncommon.

It approaches the coast at a few points in eastern Massachusetts, but its true home is far north, or on the high mountains. The Hobblebush delights in rather moist soil and in the deep shade of deciduous trees, where it often quite covers the ground, and enlivens in early spring the forests of Sugar Maple, Beech and Birch of northern New England, New York and of the shores of the Great Lakes, with its showy white flowers, and again with the deep, rich claret coloring of its unsurpassed autumn foliage.

Mr. Dawson has tried various experiments in his attempts to cultivate this plant. He finds that when it is grafted upon *Viburnum dentatum* it grows much more vigorously than it does upon its own roots, but that it will not unite with *V. Lantana*. Grafted plants two years old are already larger than wild plants taken from the woods five or six years ago. *C. S. S.*

Holiday Notes in Southern France and Northern Italy.—IV.

MILAN, the principal city of Lombardy, and one of the wealthiest manufacturing towns of Italy, stands near the centre of a plain which owes its unusual fertility to a system of irrigation more thorough than exists in any similar area in Europe. Indeed, but for its artificial supply of water the region would be scarcely capable of cultivation, for the summer there is hot and almost rainless. As it is, an unusually cold summer is the only thing which affects the crops to any extent.

Close to the central railway station passes a broad avenue of Horse-chestnuts, a fashionable drive, which follows the line of the old ramparts. The public gardens lie on the south side of this boulevard, and they are, as a whole, well laid out and contain a number of very fine trees. In the neighborhood of the Municipal Museum, however, the ground is too much cut up, and a number of flower beds, arranged carpet fashion and otherwise, look paltry and mean. The bedding generally seemed poor, the only combinations noted as good being four large beds bordered with Ivy and filled with *Musa Ensete*, *Canna Ehemanni*, flowering freely, *Colocasia antiquorum*, the Papyrus (*Cyperus Papyrus*), *Panicum plicatum* and *Eulalia Japonica zebrina*. Perhaps the most striking feature of which the gardens can boast—certainly the best from a purely ornamental point of view—were the groups of *Erythrina cristagalli* growing in the grass. The plants were evidently very old, eight to ten feet or more in height, with thick, branched stems and fine heads, the long, erect racemes of richly colored flowers contrasting well with the deep glossy green of the leaves.

Noble groups of *Magnolia grandiflora*, some of the trees laden with fruit, and here and there one bearing a second crop of flowers, filling the air with fragrance, challenged attention. This splendid evergreen never attains such size or luxuriance in England, even under the most favorable circumstances. A rather unlikely companion to the Magnolia, but one, moreover, thriving under the same conditions at Milan, is the Norway Spruce (*Picea excelsa*). A few Deodars (*Cedrus Deodara*) were also noted as being better than any hitherto seen by us in our journeyings. An interesting feature was a group of *Albizzia Julibrissin*, a handsome low tree with flat head and horizontally spreading branches, their loose habit and light green feathery leaves forming a striking contrast to the formal growth and dark green needles of the Spruces and Pines near them. Here and throughout southern France *Albizzia* (or, as it is frequently called, *Acacia*) *Julibrissin*, with its erect, brush-like racemes of pink flushed, long stamened flowers, is one of the most graceful and ornamental of flowering trees. Planted at the tongue of one of several sheets of water, a fine group of the deciduous Cypress (*Taxodium distichum*) forms a striking effect in this part of the park. Some of the stems were actually surrounded by water, and they had all attained a considerable height. At one end of the group Bamboos offered excellent cover for the water fowl. Here and there on the broad expanse of well kept turf were groups or single specimens of trees. A number of Sweet Gums (*Liquidambar styraciflua*), bearing a crop of their curious fruits, had stems from two to three feet in diameter and about seventy feet in height; these beautiful trees afforded a grateful shade by one of the main thoroughfares. The Kentucky Coffee-tree and American Beech also appeared to thrive well; neither my companion nor myself had ever seen examples in England to compare with them in any way. A group of the fern-leaved variety of the European Beech—clothed to the ground with foliage, with the sunlight playing on the leaves—was most picturesque. Fine Maidenhair trees (*Ginkgo biloba*) were observed, and large bushes of Yulan (*Magnolia conspicua*). Here, too, were huge Chimonanthus bushes and trees of *Cercis Siliquastrum*, conspicuous by reason of the innumerable red-brown pods which covered the stem and large branches. Among the best of the ornamental shrubs were *Abelia rupestris*, a very handsome plant with small glossy leaves, and a profusion of trumpet-shaped flowers, white, faintly tinged with purplish red; *Lagerstræmia Indica* of tree-like proportions in full flower; *Hibiscus Syriacus* (a long sloping bank facing the Via Palestro, planted thickly with this shrub and kept cut in to one level, produced a novel effect); and *Spiræa Thunbergi* of surprising size and vigor. Except near the Municipal Museum, the lawns were not defaced by meaningless flower-beds, though in a sort of angle we noticed a fine mass of a deep red-leaved Amaranthus about four feet high. *Desmodium penduliflorum* was remarkably attractive, both planted singly and in groups, on the turf, the long, slender flowering stems being allowed to droop naturally. The correct name of this plant is *Lespedeza bicolor*, but a plant widely different (of erect habit, with much shorter racemes and greatly inferior from a garden standpoint) is grown in nurseries under this name.

A broad flight of steps at one end, and a steep gravel path at the other, ascend from the grounds just described to the older portion of the gardens, in the centre of which is situated the Art Museum. The difference in level is skillfully utilized for rough, natural looking rockery and climbing plants. Here and there the slope is clothed with Savin (*Juniperus Sabina*), with the edges of the mass irregularly broken; a few plants scattered singly away from the general mass give a pleasing, because natural, effect. Other shrubs are used in a similar manner, but the Juniper mentioned made the most pleasing impression.

Behind the Brera, formerly a Jesuit college, now used as a picture gallery, museum, library and observatory, is a small botanic garden of about two acres in extent. It is well kept, and worthy of a visit from those who love trees. Here are to be seen the first Maidenhair tree introduced into Italy, said to be about 200 years old and thirty-eight metres high. A fine White Oak was about seventy feet in height. The Brera Botanic Garden, too, claims to have the first Black Walnut (*Juglans nigra*) planted in Italian soil. It is now a very fine, perfectly healthy tree. A good specimen of *Celtis australis*, and another of a peculiar form of *Magnolia grandiflora*, with narrow, wavy edged leaves, almost complete the list of remarkable trees. The Magnolia was named *M. Hartwicus*, but it is practically identical with forms grown in Continental nurseries under the name of *M. angustifolia* and *M. salicifolia*.

The central portion of the gardens—the trees were principally crowded round ends and sides—was laid out in six-feet beds, divided into squares of a yard in size by bricks set on edge and half buried in the soil. In these beds herbaceous plants were systematically arranged. A small basin for aquatic plants contained the best mass of *Scirpus Tabernæmontani zebrinus* I have yet seen. To most gardeners this plant, which, when thriving properly, is as handsome as it is curious, is perhaps better known as *Juncus zebrinus*, the name under which it was first exhibited and distributed. A fine Pomegranate, laden with beautiful fruit, occupied a good position close to the Brera. After seeing what is done by the Botanic Garden authorities in so restricted an area, one could not but wish that a larger piece of ground, better situated with regard to soil, exposure and other conditions, could be placed at their disposal.

Kew. *George Nicholson.*

New or Little Known Plants.

Gymnogramme schizophylla.

OUR illustration upon page 533 of this issue is made from a specimen plant of the robust form (var. *gloriosa*) of this fine ornamental Fern, which was exhibited by Mr. John L. Gardner, of Brookline, at the Rose and Strawberry Show of the Massachusetts Horticultural Society last June and received the first prize in its class.

This variety, which is of garden origin, differs from the type plant in its more vigorous habit of growth, and in its somewhat larger and stouter fronds, which are from one and a half to two feet long, gracefully arching from above the middle. They are finely cut with very minute, ultimate divisions, bright light green on the upper, and pale or nearly white on the lower surface.

Gymnogramme schizophylla is a native of Jamaica, whence it was introduced into European gardens as late as 1880. It should be grown in a warm, moist house in order to develop all its beauty. The plants are found to do well when the pots in which they are grown are suspended from the rafters or raised on the benches out of the way of neighboring plants. The ends of the long, drooping fronds are preserved in this way from contact with the benches;

and the plants are more easily protected from careless overhead watering, which is apt to destroy or diminish the scurvy powder which covers the under surface of the fronds, and is one of the chief attractions of many species of Gymnogramme.

This plant, in common with nearly all Ferns, needs a copious supply of water during the summer or growing months, and should not be allowed to become dry during any season of the year. Thorough and sufficient drainage is essential to its well-being, with sufficient shade during the middle of the day to protect the fronds from too direct influence of sunlight.

Fig. 140.—Gymnogramme schizophylla.—See page 532.

Foreign Correspondence.

London Letter.

OCTOBER is not generally favorable to flowers in the open air, but we seem to look much gayer this month than is usual, this year. Bedding plants are healthy and full of bloom, that king of summer plants, the Scarlet Geranium, being still all aglow. No nipping frosts have come to blacken the face of summer, and the Belladonna is in full glory on the sunny border under the shelter of the Orchid-house, where also the beautiful Schizostylis flourishes with its spikes of crimson cups, and the Zephyranthes with its large, white, Lily-like flowers. Autumn Crocuses are in their best array. They have been in flower since the middle of last month, and they will last until next month ends, unless a severe frost occurs. There is material in these autumn flowering species of Crocus out of which might be developed a race of plants which would be as effective in autumn as the old garden Crocuses are in early spring. *Gerbera Jamesoni*, a new Composite from the Cape, has all the characters of a first-rate garden plant. It is good for pot culture, and it is also a beautiful border plant. Such, at all events, it has proved to be this year at Kew, where it has made its début, and where it is flowering in the open border now. It has the aspect of a Dandelion, leathery leaves and scapes a foot long bearing flower-heads four inches across, Mutisia-like and colored rich salmon-scarlet, most bright and beautiful. Each head lasts at least a fortnight. Another pretty Cape Composite which is in full beauty outside now is *Agathæa cælestis*, the "Blue Marguerite." Several circular beds of it are now thickly studded with its erect blue-purple flowers. This plant is well worth planting outside for autumn effect alone. It is scarcely a foot high, and is of spreading, branching habit, with elegant spathulate leaves.

Chrysanthemums have begun in real earnest. Of course we have had flowers of these plants since July, and there is the prospect of our soon having them all the year round. But October and November are the richest season, and will continue to be so whatever the breeder may accomplish. The last meeting of the Royal Horticultural Society brought Mr. Cannell and others with some new kinds of Chrysanthemums of much promise. A handsome, reflexed Japanese variety named Doric was selected for a certificate. The flowers are rich yellow, full, of good form and medium in size. Etoile de Lyon, also Japanese, with flowers of immense size, the broad, flat florets of light rose color; Avalanche, a very fine flower, and one of the best of the Japanese varieties, being white, good in form and of large size; the habit of the plant is dwarf and compact. The famous yellow flowered kind, Mrs. Hawkins, a sport from that good old Chrysanthemum, Wormig,

was shown in splendid condition by Messrs. Hawkins & Bennett.

Orchids were represented by *Lælia autumnalis alba*, the flowers pure white with a yellow blotch in the throat; *L. præstans alba*, a beautiful novelty, the flowers being pure ivory white, save a crimson tip on the labellum; *Cattleya Hardyana*, the king of all Cattleyas and one of the most attractive of all Orchids; a hybrid Cypripedium and a curiously colored variety of *Lycaste plana*.

Hybrid Anthuriums are favorites with the President (Sir Trevor Lawrence, Bart.), who has a very fine collection of them, mostly in large specimens. They are chiefly the progeny of *A. Andreanum*, *A. Rœzlii* and *A. Veitchii*. Flowers of several hybrids were shown at the meeting. For large stoves these plants are most useful, as they flower freely and continuously, their flowers being large and brilliant in color. They are also suitable for mixing with large tropical Orchids, such as Vandas.

Exceptional activity is being displayed just now by those who believe that the position of the English farmer will be immensely improved if he can only be persuaded to grow fruit for the supply of the English market. I refer to this subject because it must be of special interest to your fruit growers and exporters, seeing that from the United States alone close upon six million bushels of apples are annually sent to the English market. It is supposed that we can do without this and grow better fruit at home sufficient to supply every demand. Mr. Gladstone thinks so. He has lately made an important speech on the subject, being himself convinced that we are altogether wrong in not devoting considerably more land to fruit culture than has been done hitherto. The present Lord Mayor of London also takes a keen interest in this question. He has had the Fruiterers' Company to a Mansion House feast, and now he makes an appeal to the public generally for pecuniary aid to the cause of this company. I quote from his letter: "The Fruiterers' Company are making a very laudable effort to bring about the restoration of fruit gardens and orchards in connection with our homesteads and cottages throughout the country." He then points to the "very large sum annually paid to foreigners for apples, pears and plums which might be grown equally well in our own land." Five thousand pounds are needed, he says, to rouse the country to the importance of this question. Prizes are to be offered for the best farm and cottage orchards.

Men who have had long experience in the culture of fruit in England do not believe that the foreign competitors can be easily ousted from the English fruit market. The very same circumstances which enable the foreign corn growers to flood the English market assist the foreign growers and exporters of fruit. Last February I purchased, at a shilling a dozen, Tasmanian apples, which I was assured by a fruit farmer were almost equal to English apples which a few years ago were worth about sixpence each at that time of year. English growers cannot compete against such odds. All we can hope to do is to enable small cultivators to grow a good supply of fruit for their own consumption. It is in this direction that the efforts of the Royal Horticultural Society are likely to do much good. By its splendid exhibitions of fruit, such as were made at the Apple and Pear Conferences held a year or two ago, by the valuable information bearing on the whole question of fruit culture which was the outcome of the conference, and by the publication of this and similar information in its journal, this society has already re-established itself in the favor of horticulturists generally. We are proud of what has been done in the short time since the revival of the society. Three years have scarcely elapsed since the present effort began, and yet the record of work accomplished is probably as good as anything done by the best of your societies. As an instance one might take the last number of the journal, which is devoted entirely to Apples and Pears. It contains 376 pages. The first part is full of valuable information from the masters of fruit culture in England. Mr. Bunyard and Mr. William Paul write on Apples for profit, discussing soil, aspect, methods of culture and the best sorts to grow; Mr. Shirley Hibberd follows on Pruning, and then come three thoughtful papers on the subject of canker in fruit trees. Few men have perfect knowledge of this terrible disease, except that it comes mysteriously and appears to be incurable. Other diseases are discussed in a paper by Mr. John Fraser. Mr. Dunn, Mr. Cheal, Mr. Coleman and Mr. Saunders treat respectively on the best kinds of fruit for Scotland, Sussex, the Midlands and Jersey. Compensation for fruit planting—a subject of vast importance here, but of which you probably know nothing—the cost of railway carriage for fruit, are subjects which receive practical attention. The second part of the journal contains statistical and other information relating to the cultivation of Apples in this country. Amongst other matters of interest, we find here proof that the following are the best and most generally cultivated Apples in England.

Six best dessert kinds: King of the Pippins, Cox's Orange Pippin, Ribston Pippin, Kerry Pippin, Blenheim Orange, Irish Pearmain. Six best culinary Apples: Lord Suffield, Dumelow's Seedling, Keswick Codlin, Warner's King, Blenheim Orange, New Hawthornden.

The discussion of grafting still continues in *The Garden*. It is condemned by some because it has not succeeded in a few cases, and it is defended by others, generally on the ground of its facilitating the work of the nurseryman. The real heart of the question is missed. Theoretically, grafting as a means of propagation ought to be just as successful as slips or cuttings, and practically we know that it is so. Certain simple rules must be observed by the operator, the first of which is what we may term consanguinity of stock and cion. The condition of both at the time of grafting, the manner of its performance, and the treatment of the grafted plants until the union is perfect, are necessarily important to the success of the operation. If clumsy workmen are employed, or if haphazard grafting is practiced, then failure will come sooner or later. But we cannot abandon grafting on this account. There is scarcely one in a thousand of our fruit trees that was not originally grafted; and many *Coniferæ* and other ornamental trees are invariably propagated in that way, because it answers better than cuttings. One might point to numbers of exceptional specimens of rare trees and shrubs which have been grafted, and which, at the least, have not suffered on that account. No one condemns cuttings as "a delusion, a snare and a swindle," because some plants are a failure when propagated by their means. Many of the Pine tribe are useless when obtained from cuttings, as every experienced propagator knows; but there are those who, through ignorance or something worse, sell these plants obtained from cuttings. If we want timber trees we do not get them from cuttings, but from seeds. I am trying to show that if the failure of grafted plants here and there is to be urged as a reason for discarding grafting altogether, then the same argument has equal force in the case of cuttings. I am told that physiologically the union between stock and cion can be made perfect, and that the success or failure of a grafted plant depends solely on what we have called consanguinity. If stock and cion work together and the supply of nutrition is kept up, there is no reason whatever why a grafted plant should fail. On the other hand, a great many plants for which grafting is not suited are increased by its means. Rhododendrons, many Roses, Azaleas, and plants which sucker freely, ought not to be grafted. I helped, some years ago, to graft many thousands of Tea Roses on the Briar and Manetti, but I know now that they are better on their own roots and that they are just as easily propagated from cuttings. I touch upon this subject in the hope that some of your readers will think it worth commenting upon. You do things on such a gigantic scale in America that grafting is sure to be well tested with you. *W. Watson.*

Kew.

Cultural Department.

Notes in a Northern Garden.

THE BEET, after the potato, is the favorite garden vegetable, and has a very wide sale in all markets. The long rooted kinds have mostly passed out of favor, though the old long blood beet has never been surpassed in quality. Well shaped beets of the turnip rooted class, round, smooth and with small tops, enjoy the greatest favor. All of these are early, but some are earlier than others, and, of late, the Egyptian has taken the lead, though good only when young. An "improved Egyptian" has lately appeared in the Boston market, which is a decided advance. The Eclipse has not seemed to me to be sufficiently fixed; at least it appears to me to vary too much in color and habit of growth. But the various forms of the dark red Blood Turnip Beet constitute the bulk of this crop as sent to market. In quality, the Bassano has never been surpassed among the early Beets.

Lately, Beets have, in many gardens, been affected with a disease which appears to be identical with the "scab" of the Potato, and, as with the Potato, the use of stable manure seems favorable to its appearance. Where badly affected, the crop is ruined for market.

Most amateur growers fail to thin out their Beets sufficiently, and the result is a small crop of small and inferior roots. In order to get a large crop of really good beets, the ground should be well enriched, and the crop carefully thinned to four inches

apart. Beets three to four inches in diameter are better than smaller ones, and many families understand that these large beets, especially if baked, are far superior for the table to smaller ones.

Beet seed is easily grown, and every gardener who is desirous of fine beets should raise his own seed, carefully selecting medium sized roots, having the characteristics most desired. These should be preserved in sand, carefully set out as early in spring as possible, and the seed stems supported as they grow by small stakes and string. A dozen beets will produce a pound or more of ripe seed.

Is the wild original of our garden Beet an annual, like the Carrot? It will sometimes send up a seed stem the first year; but also it will occasionally not send one up the second season when set for seed, but will increase in size and be as good for the table the second fall as the first. I have heard of beets in California growing on in this way for several seasons and attaining very great weights, exceeding 100 pounds.

Onions, especially onions grown from sets, have shown a disposition to rot this year. The decay begins in the spot from which the roots issue, and is of a dry character. I have noticed the same thing in "multipliers," or "potato-onions," years ago, but never before in the crops grown from black seed. If this disease extends, it will make onion growing for market an even more precarious business than it now is.

A new Rhubarb bed, which I set out last spring, has surprised me by its remarkable growth. The ground was heavily manured on the surface, and plowed about eight inches deep. Roots with from one to three buds were set rather deeply four feet each way, and did not seem to grow remarkably fast at first. But about midsummer they started ahead with tremendous vigor, and by the middle of September plenty of stalks could be found that would weigh a pound each. What seemed remarkable was, that at that time these stalks were in nice tender eating order, while those from old beds were hard and stringy.

Parsnips, as well as Beets, need careful thinning to produce good merchantable roots. I find five inches asunder not too much. The land for Parsnips, unless very light, needs deep tillage to get well shaped roots. If one is growing this vegetable for market the care necessary to get long and evenly sized parsnips is well expended. A load of this character will find a speedy sale where crooked, "sprangly" roots would fail of a buyer.

There is a considerable improvement in Carrots lately. The new Chantenay is quite astonishing in its uniformity and smoothness. Planting an experimental plot among my other Carrots, I am so pleased with it that I shall hardly care for any other sort for market sales.

Newport, Vt. *T. H. Hoskins.*

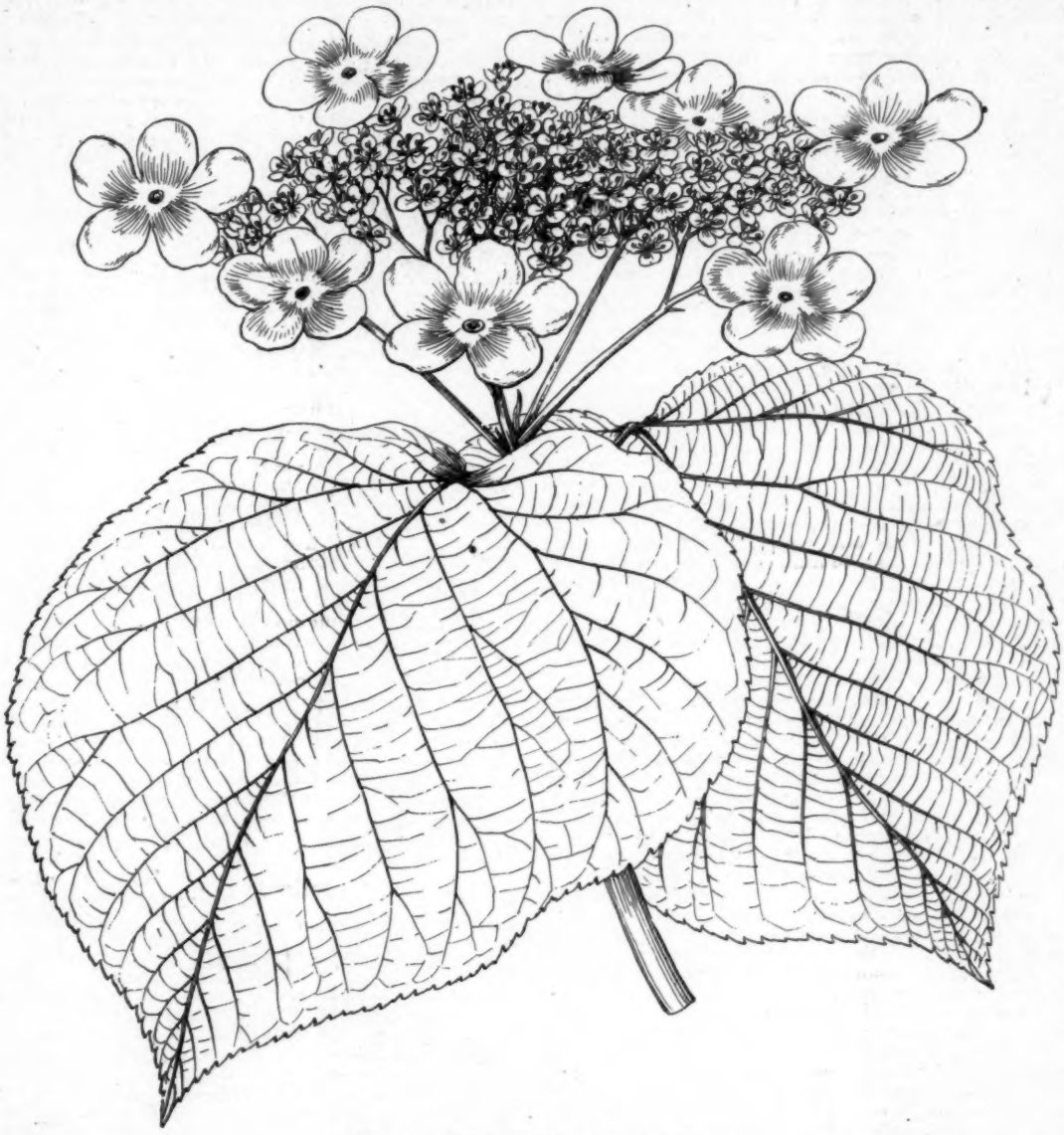

Fig. 141.—Viburnum lantanoides.—See page 531.

The Grape-fruit in Florida.

FLORIDA is notably the land of flowers, but it is quite as truly a land of fruits. Her Citrus fruits are now known the world over, and her large grape-fruit and shaddock, hitherto little appreciated by northern people, are beginning to appear regularly on our market-stands along with her oranges, limes, lemons, bananas, pineapples and dates. Many persons use the words shaddock and grape-fruit interchangeably, and the shaddock is, in fact, a near relative of the grape-fruit, but is much larger, often weighing from three to five pounds. It is also coarser than the grape-fruit, and has not yet proved very useful, but the tree and fruit as they adorn the lawns of many southern homes are strikingly beautiful. The fruits grow singly on the trees, and look like veritable pumpkins suspended from twigs. The tree comes from China and Japan, and was first brought to the West Indies by one Captain Shaddock, from whom the name was taken. There are said to be upward of forty distinct varieties of the fruit in Florida, some of which are very large and of use for canning or preserving in the same way that citron is put up. The shaddock is also known as pompelmouse or pummellow. This fruit has probably never been exhibited in our northern markets for sale. It is not of sufficient value to warrant shipping it north, for even the natives in Florida seldom take the trouble to gather it. It will doubtless be found of use in time, however, and until then it will ripen and die upon the trees in southern groves.

The cultivation of the pomelo, or grape-fruit, is extending rapidly in the south, and it is becoming a first-class marketable fruit, very valuable in the spring and early summer, after oranges are about gone, and by many people esteemed equal to the orange. When it becomes better known it will be a popular fruit during the spring months. It is prepared for the table by removing the bitter, white membranes and sprinkling the pulp with sugar. In warm weather, after it has been iced, the melting pulp and juice from between the membranes are deliciously refreshing. The pomelo can be grown more easily than the orange, and it yields more to the tree than any other member of the Citrus family. The fruit grows in clusters, two, three or four hanging together from one stem, from which peculiarity the name of grape-fruit was given to it. The trees are beautiful objects covered over with rank, glossy, dark green foliage, and loaded with thousands of bright, pendent, yellow globes. I have seen a twig no larger than my little finger with five or six big pomelos hanging from it. A comparatively small tree will often bear as many as two thousand at a time.

California also produces these fruits, but most of them come from Florida. They are sold on fruit stands according to size at from five cents apiece to fifteen cents apiece for very large ones. They vary in quality as much as oranges do, and while the good ones are very good, the bad ones, if green, are very bad. Those with smooth white skins are the best, and a little rust on them will not hurt their flavor or juiciness. The fruit is always cut from the tree, as the orange is, wrapped in tissue paper, and packed carefully in barrels rather than in boxes. They are not sized as oranges are, but are sent north with the number of fruits in each barrel marked on the outside.

It has been said by more than one southern fruit-grower that a fortune was waiting the man who had the courage to plant a grove of grape-fruit trees, and depend on them for a living. Heretofore there has been no systematic cultivation of the trees. Two or three trees are planted around the yards or orchards for ornament as much as for anything else, and allowed to take care of themselves. If properly treated, however, their yield would be much larger than it is to-day, and a good profit could be made from them. The trees should be set out about fifty feet apart each way in soil that has been prepared for them beforehand. If possible the young trees should be taken from soil like that on which they are to grow in the future; that is, if they have come from Pine-land they should not be grown on hummock-soil, otherwise the trees will become stunted while adapting themselves to the change of soil, and never perhaps attain the vigorous growth that they should. The holes should be made large and shallow, and the dirt worked among the roots with the hand, until it is packed firmly and settled by shaking the tree up and down. If planted too deep the trees will be smothered, and not do half so well as when given shallow planting. If the soil is at all dry, a pail of water can be given to each tree in planting, so that the earth is washed among the roots, and the surface should then be covered with dry soil. Trees planted in this way, and then mulched, will send out new roots and shoots almost immediately. For young trees with tender, sappy buds, a slight protection of coarse, long grass, found growing spontaneously in every old-field, if stood up and tied about the trees as gardeners protect Roses from the cold, has been found to repay cost. Muck or commercial fertilizers applied around the roots of the trees, or plowed into the soil generally, will greatly help them in their growth. Weeds should be kept down, and a good way to do this successfully is to plant Cow Peas between the rows, and plow them under. They make a good fertilizer for Florida land. Cultivation should cease late in the season, to allow the young growth to ripen and be in condition to resist frost.

New York. *George E. Walsh.*

Orchid Notes.

Dendrobium Brymerianum. — This is a very handsome and interesting Orchid, and should be in every collection. The terete bulbs are about fifteen inches long, very much swollen in the middle and tapering at each end, with four or five persistent lanceolate leaves at the apex. The flowers, which are produced in short racemes from near the top of the bulbs, are about three inches in diameter and of a rich golden yellow. The lip is very much fringed, the front lobe terminating in a long branched fimbriation, which renders this species very striking, and distinct from any of its congeners. *D. Brymerianum* was introduced from Burmah in 1874, but it has never been very plentiful. A few years ago plants from another locality were sent out for this species, but they proved to be a worthless variety, since named *D. histrionicum*. This variety may easily be distinguished from the true species by its short and more swollen stems. The flowers in this variety are small. The peculiar beard-like appendage of the lip being rarely developed, the flowers are often self-fertilized in bud, and do not open at all. *D. Brymerianum* grows freely in the warmest house, is strong rooting, and requires abundance of water during growth. It should not be kept very dry in winter, providing the house is warm.

Cœlogyne (Pleione) lagenaria.—This is one of a small genus now included in Cœlogyne, popularly known as Indian Crocus. It is a charming little Orchid, and its flowers are particularly welcome at this season. The bulbs should be planted pretty thickly in small shallow pans, so that when the flowers appear (which they do as soon as the leaves have ripened and fallen off) they will completely cover the surface of the pan, the flower scape being only about an inch long. This Orchid requires rich soil and liberal treatment during growth, but the bulbs need thorough ripening in a cool house to ensure a good crop of bloom.

Cattleya labiata vera.—This grand old species is now in perfection with us. It is of very distinct habit, and may easily be distinguished from its congeners. The clavate bulbs are about one foot long, proceeding from an unusually thick rhizome, and bearing a very thick coriaceous leaf about ten inches long, both bulb and leaf being suffused with reddish purple. The flowers, usually three on a peduncle, are about six inches in diameter, with narrow sepals, and broad, wavy petals of pale rose. The lip is very handsome, the anterior lobe, which is deeply emarginate, is very crisp and of a deep magenta-purple, with deeper colored veins extending into the throat. The side lobes are convolute and pale rose. A characteristic of this species is the purplish double flower-sheath.

The true *C. labiata* is a very rare plant, though among the first known of the genus, having been introduced from Rio Janeiro about eighty years ago; but as no plants have been found (though diligently sought for) for nearly forty years, the species is believed to have become extinct in its native country. In order to develop its massive bulbs this plant requires very liberal treatment in respect to heat and water, also plenty of air and light, and though it may be kept moderately dry during the winter months, the warmest corner of the house should always be given to it.

The finest specimens and freest grown plants I have ever seen were grown in an old-fashioned flue-heated stove pit, with the pots plunged in tan bark, and this same pit has contributed very largely toward preserving this noble species to our collections.

Kenwood, N. Y. *F. Goldring.*

Corydalis lutea.—This pretty Corydalis flowers more continuously than any hardy plant I know. Its bright yellow flowers appear in May, and the plant is still bright with them (October 30th), in spite of the severe freezing it has been subjected to; and from May until November there is not a day on which it is not in flower. *Corydalis lutea* is a native of southern Europe, where it grows in waste and rocky places. It has become naturalized through long cultivation in many countries where it did not grow originally, like England and some parts of northern France and Germany, but in this country it is not

seen very often. It is described as an annual or as a perennial, forming a tufted stock of many years' duration. Here it is a true perennial, and has been growing for years in the same place in my garden, where it has become a compact cushion, a foot high and more than two feet across. The leaves are pale green, twice divided, with obovate, cuneate segments, an inch or more broad and cut into three divisions at the extremity. The bright yellow, cheerful flowers, which are rather more than an inch long, are borne in short racemes well above the foliage on slender stems. This plant is easily increased by division or it may be raised from seed. It requires no care or cultivation, and it will thrive in rocky soil and exposed situations, as well as in the best garden loam. It is an excellent rock-garden subject, and a good plant to tuck into some out-of-the-way or neglected corner of a garden, where it will go on flowering and giving pleasure indefinitely.

Boston. *C.*

Dicentra eximia.—Last spring we took occasion to call attention to this plant as one of the best of recent additions to the list of native plants, suitable and desirable for cultivation. After the second season's trial of it we cannot forbear to mention the fact that from the first week in May to the last week in October *Dicentra eximia* has been constantly in flower. Moreover, the odor so apparent in *D. spectabilis* and other varieties of the *Fumariaceæ*, is totally absent in the plant under note. The figure of *D. eximia*, given in the "Dictionary of Gardening," is not a good representation of the plant, as it is with us. This may be accounted for on the supposition that the difference in climate affects the appearance of the plant, or that our plant is a geographical form of the plant commonly grown elsewhere under the name of *D. eximia*. Our original plant came from Tennessee, where it is by no means common in a wild state. There, however, it seeds freely, whereas here it rarely produces a seed vessel, owing probably to the absence of the necessary insect agency. The flowers are closed at the apex, and the bees here, when forcing an entrance, injure the organs of reproduction to such an extent as to preclude the possibility of successful fertilization. *D. eximia* must therefore be propagated mainly by division, and this is easily accomplished early in spring before the growth is far advanced. It may also be added that when seed is produced it must be sown at once, and then germination will take place the following spring. Seeds of plants included in the order *Fumariaceæ* are notoriously long in germinating.

Passaic, N. J. *E. O. Orpet.*

The Forest.

Some Japanese Trees in New England.

DR. GEORGE R. HALL is the first American who sent Japanese plants to the United States, in any considerable numbers, at least. His first visit to Japan occurred in 1860; and his first shipment of plants was made not very long afterwards. They were sent principally to Mr. Parsons, of Flushing, who propagated and distributed them, as well as a number of other Japanese plants sent home by Mr. Thomas Hogg, who a little later lived several years in Japan and devoted much attention to collecting seeds and plants for the Flushing Nurseries. A number of Dr. Hall's Japanese plants were planted early on his farm near Warren, R. I. (about 1870), and have grown into what, I believe, are the finest specimens of certain species which can be found in the eastern states. Some of them I have not seen equaled in Europe. A few notes, therefore, upon these trees which I have recently had an opportunity of visiting will, perhaps, be interesting.

The plantations are confined, in the main, to the northern and eastern sides of an open field, on the top of the ridge which extends continuously from the town of Warren to Bristol. It is open to the south-west and fully exposed to the south-west winds which sweep up Narragansett Bay. The situation, I should think, was a very trying one, especially for conifers. The soil of the field, however, is a good strong loam, and close planting has been of assistance to the trees, which are principally conifers.

Two or three specimens of deciduous trees may be mentioned. The first of these is *Zelkowa Keaki*, with a short trunk fourteen inches in diameter, dividing into a number of stout, upright branches. This tree has a total height of fully thirty-five feet. It is the only specimen of this plant I remember to have seen growing in the United States, and I have never seen one a quarter of the size in Europe, although larger ones exist, perhaps, in the Mediterranean countries. In habit, Dr. Hall's plant resembles a common form of the American Beech of the same size, and the bark is not unlike the bark of that tree. The following account of the Zelkowa, which is one of the largest and most valuable of the Japanese trees, is extracted from Rein's "Industries of Japan" (see GARDEN AND FOREST, page 321 of the present volume), in which will be found the most satisfactory account of the economic properties and uses of many Japanese plants which has been published:

"The Keyaki (pronounced Kéaki) of the Japanese is a stately, and, because of its wood, a useful tree, found in forests and temple groves, as well as along the sidewalks of village streets, particularly in the neighborhood of Tokio. It sometimes reaches prodigious size, from ninety to 120 feet in height and thirty feet in circumference. In appearance it has a strong resemblance to *Celtis australis*, of the Mediterranean regions, as for instance the fine specimens of this kind in the Botanical Garden at Madrid. But it is also similar to our Beeches.

"Keaki is the favorite joiner's wood, and plays in Japan the part of oak wood with us, and is somewhat like it. Its most notable recommendations are, that it does not split or warp easily, so that cross sections may be used, that is, for trays and bowls, as is done in the Hakone mountains. It is also noted for its great toughness, elasticity and durability, as much in water as in dry air, if not felled when full of sap. The smooth, gray-white bark resembles in color and thickness that of our Beeches; the soft, light-colored sap-wood is quickly transformed into grained wood, whose color varies according to the situation and age of the tree, from light to dark brown. To make it more valuable, the color is often deepened by a long submersion in water before working. Keaki is lighter than oak, having a specific gravity of only 0.682. When cut crosswise its small pith-rays are easily distinguished, as is the case with all elms, and the girdles of numberless larger pores on the inside of the year-rings is plainly marked. These pores and their walls show very distinctly even when cut lengthwise. This reveals also the parallel and straight-fibred character of the ordinary wood. It serves the Japanese for many purposes: in ship and house building, in furniture making, turnery ware, and for manufacturing many small articles. It takes different names according to its coloring, the highest estimate being placed on Tama-moku, or speckled wood, also called Tama-no-keaki.

"In all the qualities which have been mentioned, it excels the other *Ulmaceæ*. On the other hand, its branches are so fine and its foliage, like the Celtis, is so light that it cannot be used like the Elm as an ornamental or shade-giving tree. Its draft upon the soil is about the same as with its kindred. It is found in its best condition on light clay soil, in which it can spread and develop its roots symmetrically. It belongs to the lower region of the mountain deciduous forests, and in Hondo seldom grows beyond an elevation of 800 to 1,000 m. It is not widely distributed or frequent, and only attains on the plains, in temple groves and along the roads, those large dimensions which distinguish it beyond all other deciduous trees, except the Camphor Laurel."

There is in the garden near the house the finest specimen of *Quercus dentata* which I have seen. It is about twenty-two feet high and well furnished with branches nearly to the ground. It is always a striking plant on account of its conspicuous buds and large, deeply lobed and brightly shining leaves, which are often more than two feet long. They turn, later in the season, to deep orange, but at the time of my visit (October 24th) were quite fresh and green, although the leaves on all the native Oaks in the neighborhood, both White and Black, had changed color some time before, and were falling. This Oak is often grown in Japan, according to Rein, as a small ornamental tree for gardens, on account of its handsome foliage. He found it very common on the island of Yezo, and as a shrub on the borders of volcanic forests in northern Hondo. The wood is said to be coarse grained and to possess little value. *Quercus dentata* is often known in gardens as *Q. Daimyo*, and it was first distributed from Flushing as *Q. Halliana*.

Near the Oak is a plant of *Magnolia hypoleuca* (GARDEN AND FOREST, vol. i., f. 49). It is much smaller than Mr. Hogg's tree in New York; but the fact that this fine species is hardy in New England is interesting. It is the Ho-ko-ni of the Japanese, and Rein gives this description of it:

"This fine, highly interesting tree appears in all the mountain foliaceous forests of Japan from Kiushiu to Yezo, not, however, collected together, but scattered about among other deciduous woods. Toward the north its frequency increases; it attains here, also, its largest dimensions, with trunks of more than six feet in circumference and sixty to seventy-five feet in height. It is found, also, in the high foliaceous forests of middle and northern Hondo, on the island of Yezo, and

even in southern Saghalin. It rivals in height and thickness the other deciduous forest trees in its company, and all the other varieties of its own race, even the North American *M. grandiflora*. Few of its kindred endure the rigors of winter so well.

"Ho-no-ki loves a good soil, and grows best in the shade of high trees, especially the Beech forests. Oaks, Maples, Ashes, and especially *Æsculus turbinata* and *Acanthopanax ricinifolia*, are frequently its companions.

"The smooth, grayish-white bark of the straight trunk, which in thick, high forests is branchless to a considerable height, reminds one of the Beech. The crown is formed of thick, widely spreading, but not so numerous nor so ramified branches, and its leaves and flowers give the tree a peculiar beauty."

"Every branch develops about ten leaves, which are crowded together in verticillate form near the end. In the midst of this beautiful wreath of leaves there unfolds, about the middle of May or beginning of June, a splendid large white flower, with a pineapple-like perfume. Even later in midsummer the Ho-no-ki tree presents a surprisingly beautiful appearance. When the wind sways the foliage of the Magnolia-lined mountain side, and the lower side of the leaf is turned upward, the tree looks to one at a little distance as if it were for a second time covered with blossoms.

"By October the trees are bare. The long, ellipsoidal, reddish brown fruit capsules, with their pink seeds, soon follow the leaves. The seeds, like all of this species, soon lose their germinating power, which is probably the main reason why the Ho-no-ki is still a stranger to our European gardens. The Ho-no-ki in Japan surprises and delights every lover of plants, and it is easy to agree with Dupont when he calls it more ornamental than *Magnolia grandiflora*.

"The light, grayish-white wood changes gradually to a deeper shade. It is soft, easily bent, and elastic, and has a fine, even grain, which makes it applicable to many uses. The wood engraver uses it in patterns for cloth printing, and the lacquerer finds it adapted to various small articles. The sides of the pretty, light and durable oval bread baskets are generally made out of Ho-no-ki. Two thin strips of the wood are bent around the ellipitical pine wood bottom, their sharpened ends bent over each other and glued, and tacked to the bottom board. Sword sheaths (Katana-no-saya) were also formerly made out of Ho-no-ki. In Niigata and Yonezawa it is used as the groundwork of nearly half of all the lacquer ware, and from it is prepared the soft, fine grained charcoal which is used throughout the whole of Japan for rubbing the lacquer and for polishing the enamel of cloisonné ware."

Taxus cuspidata is represented by a broad pyramidal specimen twelve feet high, the branches covering a space on the ground forty feet round, and producing fruit sparingly. This is by far the finest specimen I have ever seen. *Taxus cuspidata*, according to Rein, is "a bush or low tree eighteen feet high, found mostly in Hida and in Yezo, and used often as a decorative plant. Its highly valued wood is marked by a beautiful red color, fine grain and great toughness. On account of this last quality it is used by the Ainos for their bows." The Japanese Yew is now considered by Maximowicz a form of the widely distributed *Taxus baccata*, the so-called English Yew. As seen in cultivation here it differs from the common forms of that species by its longer leaves and by its more strictly pyramidal habit. There seems no question of the hardiness of the Japanese plant, even in the most exposed positions; and as it is the only Yew which grows to any size, which is hardy in the extreme northern and eastern states, it is destined, probably, to play a considerable part in the decoration of northern gardens. This plant is still exceedingly rare in cultivation, and little known in this country and in Europe.

Abies firma appears in Dr. Hall's plantations in half a dozen specimens twenty-five to thirty feet high, with stout, clean trunks, bare of branches to a height of five or six feet from the ground. The specimens are beautifully colored with dark green leaves, and are growing with the greatest vigor, especially the main stems, the leading shoots of the year being all two to three feet long and remarkably stout. *Abies firma* is one of those trees which grows at the top at the expense of the lower branches, which are generally weak, become shaded by those above them, and so die early. This habit takes away from its beauty as an ornamental tree, but makes it more valuable for forest-planting, where the production of long, straight timber, free of knots, is desired. This species, the Momi of the Japanese, is, according to Rein, "spread over the whole of Japan; more general, however, in middle and northern Hondo, and on the southern Islands. It is found chiefly, and in the highest development, in mixed forests, among the beautiful deciduous woods, at an elevation of between 3,000 and 4,500 feet, seldom isolated. It develops the most magnificent trunk of all the Japanese Firs, and grows in parks and temple groves to a height of ninety to 120 feet, with a circumference of twelve to fifteen feet. In its entire bearing, as well as in the character of its wood, this tree resembles our *Abies pectinata*, but has a much slower growth. Its wood is lighter, rougher and less tough than that of the Pine, hence cheaper and less valued. It is seldom used in house building."

The best specimens of *Picea polita* I have seen are in this plantation, the largest being about twenty feet high. They are all well furnished to the ground, and have stout, vigorous leaders. These specimens, of which there are half a dozen, appear, on the whole, promising, although I noticed on one or two of the trees that the leaves on the lower branches had turned yellow and were falling, a not unusual thing with this tree, which I believe, however, will prove to be one of the most valuable of the Japanese *Abietineæ* for this climate. It makes, Rein tells us, "a fine stately tree, with the bearing of *Picea excelsa*, belongs to the high mountain districts and northern parts of Japan, and is little used. In modern times, on the island of Yezo, however, it has been much employed in building." This species is the latest of all the Firs to begin its growth here, and would, therefore, be valuable in countries where late spring frosts are common.

Chamæcyparis (*Retinospora*) *obtusa* has been used successfully by Dr. Hall in forming wind-breaks, which are now fully twenty feet high; and there are a number of fine single specimens twenty to thirty feet high scattered through the plantation. These represent one of the most graceful and desirable forms of this exceedingly variable species, which, as it is seen here, is very ornamental, although generally unsatisfactory in this country. This tree, in Japan, occurs most generally on mountain-sides, where it grows to a height of ninety or 100 feet, with a trunk three or four feet in diameter. It is the Hi-no-ki of the Japanese, and "is particularly sacred to ancestry cultus (Shinto worship), and is cultivated on this account more than any other. The wood is white or pink, smooth, light and very tough, fine grained, poor in resin and free from knots. It is preferred for lacquer ware, and used exclusively for building Shinto temples. The palaces of the Mikado and his family at Kiōto were always built of Hi-no-ki wood, and roofed with the bark of the tree, which, when very old, can be easily cut into long stripes. Criminals condemned to harikari (disemboweling) were formerly presented with a dagger upon a small white unlacquered table of Hi-no-ki wood, and on a similar one is offered the food and drink to the gods at festivals."

There is a perfect specimen of *Thuiopsis dolabrata*, twelve to fourteen feet high, a large size for this country, where this tree is, unfortunately, less hardy than many of the Japanese conifers, but by no means an unusual one in Europe, where it thrives admirably. According to Rein "the wood is yellow, is marked by its durability in water, and is therefore much used for stakes, as well as in ship and bridge building. It is also employed for lacquer wares and window sashes."

There are several specimens of *Pinus densiflora*, thirty-five to thirty-eight feet high, with spreading branches resting on the ground and covered with cones. The trunk of the largest specimen girds forty-two inches three feet from the ground. This is a picturesque, but hardly a handsome, tree. It has the advantage, however, of growing rapidly on poor soil and of being perfectly hardy. It is the *P. Massoniana* of many gardens, but not the true *P. Massoniana* of Lambert, which is a south China species, not hardy here. Rein says that "*Pinus densiflora* (Kuro-matsu) makes the least requirements as to soil of any tree in Japan. If the sand dunes, thrown up by the waves of the sea, have attained some firmness through the settlement of deeply rooted strand plants, among which generally the creeping Juniper (*Juniperus littoralis*) is often found, the Japanese turn them to good use by plantations of Kuro-matsu. This Pine is, therefore, of very much the same importance here as *Pinus Pinaster* in the French Département Des Landes, which has been previously mentioned. From the coast to 300 metres above the sea we find the Kuro-matsu on land that would afford no support to other conifers. It comes to its best as a shade tree on the country roads and in temple court-yards. Trunks from 150 to 200 years old, with a circumference of twelve to eighteen feet, and ninety to 100 feet high, are here not infrequently found."

Two plants in Dr. Hall's plantations, which I take to be *Abies Cilicica*, surpass in beauty the Japanese plants; and if my determination of the species is correct, this is certainly one of the most ornamental Silver Firs which will thrive in the

northern states. These specimens are slender, narrow pyramids, fully thirty-five feet high, and perfectly furnished with branches. These have a tendency to turn up at the ends, and so expose the white under surface of the leaves, thus giving to the whole tree a decidedly silvery appearance, which is striking and beautiful. This species is too rarely seen in collections. It suffers in England from spring frosts, and is, therefore, rarely propagated in English nurseries; and I have never seen a good specimen in Europe. This will sufficiently explain why the Cilician Fir has not been planted more often in this country, in spite of the fact that Dr. Hall's plants and several fine specimens in Mr. Hunnewell's Pinetum show that it is able to adapt itself to the climate of New England.

C. S. S.

Correspondence.

Variegated Wild Plants.

To the Editor of GARDEN AND FOREST:

Sir.—In 1888, at Nonquitt, Massachusetts, I noted the following variegated plants:

Spartina cynosuroides.—Finely striped with gold. It did not blossom either in that or in the succeeding year, although the green variety adjoining bloomed as usual.

Kalmia angustifolia.—Finely gold-blotched. I distributed a number of herbarium specimens. On visiting the locality, which was along the road-side, in 1889, I found the whole patch had been cleared off and burnt over.

Rumex acetosella.—In 1889 I found a single specimen beautifully variegated with yellow. It had a more compact growth than usual, and with a little increase of size might have been deemed attractive.

Barbarea vulgaris.—While at the New York Agricultural Experiment Station at Geneva, a specimen very prettily variegated with white blotches was removed to the greenhouse and grown for two years, retaining its variegation during the whole time.

Will some of the readers of GARDEN AND FOREST add to this list?

South Framingham, Mass. *E. Lewis Sturtevant.*

Data Concerning the Growth of Native Trees.

To the Editor of GARDEN AND FOREST:

Sir.—In the spring of 1835, a considerable number of White Pines (*Pinus Strobus*) were planted about my residence. Of these fifteen are still standing and are apparently in full vigor. My uncle, who planted these Pines, states that they were of very uniform size, their trunks measuring about two and a half inches in diameter. At present, the smallest of the series measures forty-three inches in circumference, four feet from the ground, and the largest seventy-nine inches. Nine of them vary from sixty-two to sixty-eight inches. The average circumference of the fifteen trees is sixty-two and a half inches.

These trees were not placed at uniform distances from each other, and some show the certain ill effect of overcrowding. This is conspicuously the case with three of the Pines, and these have suffered. Had the planting been done with greater reference to the future, and an equal chance given each tree, the average circumference would have been greater by at least three inches; the girth of the twelve largest being sixty-five inches. As it is, including the three somewhat stunted trees, the growth (circumferential measurement) has been sixty inches in fifty-four years; an annual increase of one and one-ninth inches.*

These Pines stand upon a bluff, composed of compact, ferruginous sand of great depth, and are exposed to the full sweep of the western and northern winds. In the matter of soil and exposure they have had equal chances. It is not readily seen, if at all determinable, why more of these trees should not have reached the maximum size, and become stately trees, which, in a sadly deforested landscape, are commanding objects.

A year later two Wild Cherries (*Prunus serotina*) were planted near the Pines, by the same person. "These trees were very small," he writes me, "as I pulled them up with my hand and carried them to the yard, as one would a walking stick." Probably neither were more than an inch in diameter." These trees are in full vigor to-day, one measuring seventy-three inches and the other sixty-eight in circumferance. The former is fully fifty feet in height; and the crop of fruit it bears annually is enormous.

In 1836 my grandfather found among a lot of Peach-trees that he had purchased an Elm (*Ulmus Americana*) which "was a mere switch." It was planted in an out-of-the-way corner, and is now a splendid tree, with a spread of branches measuring seventy feet. The circumferential measurement, at a height of four feet from the ground, is 103 inches.

Of the Oaks, Cedar and Beech, of which I have many fine specimens upon the farm, I have not been able to gather any definite data, but it would appear that the growth is exceedingly slow after a certain term of years. My uncle is very positive that a Black Oak in the lane and a Red Cedar near by have not increased materially in growth in the past half century. He believes the Cedar to have "quite stood still," and this may not be so strange, for it is known to be considerably over 100 years old. It was a conspicuous road-side tree in 1802. It measures but eighteen inches in diameter.

Trenton, N.J. *Charles C. Abbott.*

*Since the above was written, one of these Pines has been felled and the rings of annual growth carefully counted. They are sixty in number, which accords with the history given above of the planting, now nearly fifty-five years ago. It may be well to add that, while each ring is distinctly defined, there are several much larger than the others, and a general increase of the width of the rings upon the south-eastern side of the trunk.

Chrysanthemums at the United States Nurseries.

To the Editor of GARDEN AND FOREST:

Sir.—No horticultural event last year aroused more interest than the exhibition in the fall of a few blooms of the Mrs. Alpheus Hardy, a white Chrysanthemum of unique beauty. On the last day of October I visited the establishment of Messrs. Pitcher & Manda, who signalized the opening of their business career by the courageous purchase of this variety for a much greater price than had ever been paid for a Chrysanthemum. The visitors who will throng these nurseries this week, at the invitation of the proprietors, will find the flowers in more advanced condition than when I saw them, but, even then, the Chrysanthemums were already massed and tastefully arranged in one of the larger houses.

The general effect, as one passes from the Orchid houses and stands on the steps by which entrance is had to the larger and lower house, is one of striking beauty, a great mass of the Mrs. Hardy filling the entire centre, and the fine blooms of the general collection lining the entire outer circuit. Standing here to enjoy the general effect, one notes the strong and weak points of this favorite flower. Certainly no other species gives us the wealth and diversity of bloom, such grand flowers here and delicate ones there, with innumerable shades of color—here the soft white of Mrs. Hardy, there whites of all tones; yellows, from palest primrose to deepest orange; reds and bronzes of seemingly every possible combination. The true blue Chrysanthemum has not appeared, but, unfortunately, there is blue mixed with the reds, and this is the most discordant color in the family. Noting the vigor of the plants and the bold and massive effect of the blooms of a well grown collection, one is impressed with the masculine beauty of this flower, and it seems a pity that it has not been dubbed the "King of Autumn" instead of "the Queen." In the centre bed were planted some 2,000 late struck plants of the Mrs. Hardy, which were blooming freely, although not yet in perfect form. Judging from some grand flowers on the larger plants at the end of the house, this variety is fulfilling all its promises.

Messrs. Pitcher & Manda have also been fortunate in securing the newest seedlings of Dr. H. P. Walcott, who is well known as the first raiser of American seedlings and an enthusiastic amateur. Noticeable among these were Shasta, clear white, globular heads, tubular florets; Semiramis and Tecumseh, both in the way of Mrs. Wheeler; Adirondack, a fine Chinese incurved sort, very pure white; Ramona, an incurved Japanese, light amber; Monadnock, a yellow Gloire Rayonnante, and Manitou. Here are also some promising Short Hills seedlings, the best of which is said to be Number 26, a full globular flower, pink and rather early. Among a consignment of Japanese varieties received this year the most promising are provisionally named 4xxx (white), 18 (bronze), 9 (yellow), 4x (deep yellow). All the well known best varieties are grown, as well as the latest productions of the Continental florists. Some of the most promising of the new kinds under trial are "*C. Souchet*" (Del.), coppery, reflexed; Suzon (Rey); La Tosca (Del.); M. Louise Leroy (Del.), one of the best of the new whites; M. Constant Varin (Del.), yellow, fragrant; La Fortune (L. Lac.), yellow (extra); Belle Pointevine (Brt.), very fine white, incurved. Those who do not succeed with Empress should try this and Walcott's Adirondack. Of Fewkes' set L. B. Bird and Kioto seem to be the choice.

As is well known this nursery has a grand collection of Orchids, and though comparatively few are in blossom at this

season several charming banks are arranged on the benches, with here and there a gem. Such a plant is *Lælia Eyermanni alba*, the only individual known. *Vanda Sanderiana* and *V. cærulea*, in fine form, are, however, plants which would better satisfy the ordinary eye. Cypripediums are to be seen in apparently countless profusion, they being a great specialty here. Nepenthes, too, are abundant, while great masses of Palms and decorative plants fill every spare space, and all seem in robust health and carefully grown.

A new Cuphea, whose varietal name I did not learn, was shown in a great mass—an almost startling combination of scarlet and purple with white stamens. It is said to be an excellent bedder.

Aside from the flowers one could not but notice the remarkable order, neatness and care everywhere evident, and the vigorous health of all growing things.

Short Hills, N. J. *G.*

Notes.

A meeting of influential citizens in the upper San Joaquin Valley has been held to take steps toward securing a large reservation in the Pine and Sequoia forests of the Sierra in the Fresno and Tulare region. The subject will be pressed at the approaching convention of fruit growers in Fresno.

An agricultural and forestry exhibition, under the auspices of the Imperial Agricultural Society of Vienna, will be held in that city next summer, from the 15th of May to the 15th of October. Forest products of Austria and Hungary only will be admitted, but foreigners are invited to exhibit machinery and tools used in cutting timber and manufacturing lumber, and to contribute memoirs on scientific subjects relating to the forest.

The autumn exhibition of the Hampden County Horticultural Society will be held at Springfield, Massachusetts, on November 12th–15th, when it is expected that one of the best collections of Chrysanthemums ever seen in New England will be displayed. The Connecticut Valley Florists' Club offers a year's subscription to GARDEN AND FOREST for the best new seedling Chrysanthemum, shown this year for the first time by the grower and having real merit.

Berberis Thunbergii was, last week, the most beautiful shrub in the Arnold Arboretum to many persons. The plants still retained their foliage, which had turned to the most brilliant scarlet, and were loaded with the bright red fruit, which hangs on the branches until the appearance of the new leaves in the spring. There is certainly no shrub more attractive in the fall of the year than this Japanese Barberry, and none which retains its autumn brilliancy for a longer period. It has proved an introduction of first rate merit.

One of the most beautiful of all shrubs in the color of its autumn foliage is the Japanese *Euonymus alata*, which just now is at its very best. The leaves of this plant turn bright rose colored, something unknown in other plants, or certainly very unusual. The broad, corky wings which grow on the branches give interest to this species, but the flowers and fruit are small and inconspicuous. The beauty of its autumn foliage, however, compensates for this; and this Euonymus should find a place in every garden in which shrubs are grown.

Zanthorhiza apiifolia, the Yellow-root of the Alleghany Mountains, a low under-shrub with spreading root-stocks and handsome pinnate foliage, is one of the last plants in the garden to take on its autumn colors, which are brilliant orange and scarlet. This alone would make the cultivation of the Yellow-root desirable. The habit of the plant, moreover, is good; the foliage is always attractive, and, as it grows well under trees and spreads rapidly, it is a desirable subject for covering shaded banks and slopes, in spite of the fact that neither the flower nor the fruit is at all conspicuous.

A combination of autumn colored foliage, which has come under our notice this season, is worth recording. A European Beech and a Scarlet Oak are growing next to each other in a large circular group of trees on the lawn of a suburban villa near Boston. Three or four of the large branches of the Oak have grown through those of the Beech and protrude several feet beyond them. The leaves of the Beech are still as bright and green as they were in midsummer, while those of the Oak have turned brilliant scarlet. The effect of color produced by the contrast of these two trees standing side by side is splendid, and it is greatly heightened by the scarlet branches of the Oak growing as it appears directly out of the green Beech.

The New Hampshire Forestry Commission met at Concord, October 4th, and organized by electing Joseph B. Walker, of Concord, President, G. Byron Chandler, of Manchester, Treasurer, and J. B. Harrison, of Franklin Falls, Secretary. The commission will endeavor to stimulate popular interest in the preservation of the characteristic scenery of the state and to make a thorough examination of the present condition and methods of treatment of the mountain-forests. As New Hampshire has no state lands, nothing can be accomplished for the preservation of the forests except by the intelligent co-operation of private land-owners and lumbermen.

Two years ago a Mr. Barber tried the experiment of planting Pampas Grass on five acres of land in San Bernardino County, California. A few weeks ago he cut from the five acres 70,000 plumes, which he sold for three and a half cents each, or $2,450 for the crop. The expense of caring for the five acres has not been in excess of $450, and the crop has netted him $400 an acre. Next season he expects to net $500 an acre, as the plants will then be three years old and in full bearing. The demand for the plume of the Pampas Grass is constantly increasing and it has been demonstrated that it can be profitably grown on high-priced land.

The number of Orchids of good varieties, and the quality of the specimens which are now seen in the florists' windows in this city, shows, more clearly than anything else, the great advance which has been made in the general cultivation of these plants in this country and the appreciation in which they are held for decorative purposes. High-class plants like *Vanda cærulea* and other Orchids occasionally seen in the windows of New York flower-sellers will not now be found, it is safe to say, in similar establishments in any other country in the world; while in matters of taste, as shown in the arrangement of the plants and flowers offered for sale in these establishments, the American florist has no equal. The most expensive plants, especially Orchids, are found in New York; greater variety of material, however, better Roses and the best taste in arrangement are now seen in the florists' windows in Boston.

The prizes awarded to exhibitors at the Paris Exhibition were distributed on the 29th of September. The ancient and distinguished house of Vilmorin, Andrieux & Co. received two Grand Prizes—one for flowering plants and one for vegetables. The Forest Department of France received a Grand Prize for its exhibition already described in these columns. Grand Prizes were awarded, among others, to Croux & Fils, and to Honoré Defresne, for their collections of hardy trees and shrubs. A gold medal, the highest award in its class, was given to the *Révue Horticole*, which, in the sixty-seven years of its existence, has exerted an immense influence in shaping and developing French horticulture, and has contained, in the long list of its editors and contributors, the names of the most distinguished botanists and horticulturists France has produced during the last half century. The small assistance France received from foreign nations appears in the fact that only forty-eight awards were made to foreigners for horticultural exhibits; of these only four were English. The United States apparently was not represented in the horticultural exhibition; at least, no award comes to this country.

M. Lemoine, the successful and distinguished hybridizer of Nancy, has produced in his new Gladioli the most striking novelty of recent years among garden plants, and one which, if the early promise of his seedlings is sustained, will give to our gardens a decorative plant of the very first order. As the readers of GARDEN AND FOREST already know, the new hybrid is to be known as *Gladiolus Nancianus*. It was obtained by crossing the hybrid *G. Lemoinei*, one of Lemoine's earlier triumphs, with the scarlet flowered *G. Sandersii*. Too much, certainly, has not been said of the vigor of the plants, or of the beauty of the flowers of this new hybrid. Plants in Lemoine's garden during the past summer were fully five and a half feet high, with long, compact spikes of broad flowers with spreading segments. They vary in color from the deepest scarlet to pale, clear rose, and all are marked with the conspicuous spot, which is the prominent characteristic in the coloring of the flowers in *G. Lemoinei*. The new race flowers in July or early in August; that is, rather earlier than most garden Gladioli. A few varieties have been so far tried and propagated as to permit their being put upon the market this autumn; but among the newer seedlings there are several which now appear more promising than any which have already received names. M. Lemoine received a gold medal at the Paris Exhibition for a collection of cut spikes of his new hybrid.